

## 3.0 PROJECT ALTERNATIVES

### 3.1 Project Alternatives Considered

#### 3.1.1 No-Action Alternative

Under the No-Action Alternative, the proposed project would not be constructed or implemented. The existing local road, regional road and highway network would essentially remain in its current configuration with only normal maintenance and repair of the existing roadways and associated structures by the respective agencies and departments.

The construction of U.S. Route 20 is to be part of the National Highway System, as existing U.S. Route 20 currently is. However, implementation of the No-Action Alternative would perpetuate a functionally obsolete facility within that system. The No-Action Alternative will not reduce congestion, will not improve traffic safety, will not provide system continuity, will not improve community access, and will not meet the demands of economic development and recreational growth in the region.

#### 3.1.2 Build Alternatives

Under the Build Alternatives, U.S. Route 20 would be constructed as a four-lane facility from Illinois Route 84 north of Galena to Business U.S. Route 20 near Bolton Road northwest of Freeport. A total of ten freeway alternates and two expressway alternates are being considered under the Build Alternative. Traffic on eastbound and westbound lanes would be separated by a minimum 15.2-meter (50-foot) wide median. The proposed facility would typically require right-of-way widths of 91.4 meters (300 feet), at a minimum, to a maximum of 194 meters (640 feet). The actual right-of-way width would depend on the constraints at any given location. Figures 3-1a and 3-1b give an overview of the sections that make up the twelve build alternates.

#### 3.1.3 Sections

Due to the length and complexity of the project, the improvement is defined by sections. A section is a unique alignment either horizontal and/or vertical. All sections are defined by node points as designated on the Section Map by letters A through K. Each alternate is then defined by and consists of a series of adjoining sections. Figures 3-1c through 3-1f provide enlarged views of complicated areas of the sections.

##### **3.1.3.1      Section AB**

Section AB starts west of the intersection of existing U.S. Route 20 and Illinois Route 84 northwest of Galena, as shown on Figure 3-1a, and connects with the existing expressway cross section with two lanes in each direction. This section would continue in an easterly direction for approximately 3.8 kilometers (2.4 miles) before curving to a southeasterly direction. The crossing of the Galena River, the Illinois Central Railroad (the former Chicago, Central and Pacific Railroad, purchased in 1996), and Stagecoach Road would occur northeast of Galena. Section AB would pass to the east of Horseshoe Mound and cross existing U.S. Route 20 in a due south direction. This section continues in a general southeasterly direction ending just east of the intersection of Devil's Ladder Road with U.S. Route 20.















Table 3-1 lists the cross road and watercourse crossings for all sections. There are three interchanges planned for this section - one at U.S. Route 20/Illinois Route 84 northwest of Galena, one at existing U.S. Route 20 east of Horseshoe Mound, and one southwest of the Galena Territory near Devil's Ladder Road. Section AB is common to all Alternates. This section has been designed as a freeway type facility utilized by all Alternates including the Expressway Alternates. The total length of Section AB is approximately 16.6 kilometers (10.4 miles).

### **3.1.3.2 Section BC**

Section BC continues in a general southeasterly direction. This section passes to the west of Tapley Woods, roughly paralleling existing U.S. Route 20, as shown on Figure 3-1a. The section ends just southeast of the existing intersection of U.S. Route 20 and Illinois Route 84 (south), west of Elizabeth. One interchange is planned within this section, just before the end of the section near Illinois Route 84. This intersection would include the relocation of Illinois Route 84.

Section BC is common to several Freeway and Expressway Alternates. Section BC has been designed as both a freeway and expressway type facility depending upon the Alternate. The total length of this section is approximately 9.4 kilometers (5.9 miles).

### **3.1.3.3 Section BD**

Section BD proceeds to curve in a southwesterly direction one and one-quarter miles into Irish Hollow before curving to the east, as shown on Figure 3-1a and Figure 3-1c. The alignment continues east for a short distance before resuming a southeasterly direction. Section BD curves to the east just before crossing Illinois Route 84 (south). One interchange is planned for this section at Illinois Route 84 (south). The section ends near Elizabeth-Hanover Road, southwest of Elizabeth just after crossing the Apple River. The length of this section is approximately 13.4 kilometers (8.4 miles).

### **3.1.3.4 Section BF**

Section BF extends from Section AB, southwest of the Galena Territory, in a general easterly direction, and crosses existing U.S. Route 20 while skirting Tapley Woods to the north, as shown on Figure 3-1a. Once past Tapley Woods, this section swings to a more southeasterly direction, into Longhollow, for approximately 2.6 kilometers (1.6 miles). At Georgetown Road the alignment heads easterly, bypassing Elizabeth and Woodbine to the north. The section dips to the south to avoid a very steep section north of Becker Road while crossing the Apple River. Just northwest of Woodbine, Section BF pivots to a northeasterly direction before resuming an easterly direction. The section ends approximately 1.8 kilometers (1.1 miles) east of Scout Camp Road. Two interchanges are within this section - one at Scales Mound Road northwest of Elizabeth and the second northwest of Woodbine. This section also includes the 3.4-kilometer (2.1-mile) extension of Illinois Route 84 from existing U.S. Route 20 to Elizabeth Scales Mound Road at relocated Georgetown Road, just south of the proposed Scales Mound Road interchange. The total distance for Section BF, including the extension of Illinois Route 84, is approximately 23.2 kilometers (14.5 miles).

### **3.1.3.5 Section CD**

Starting west of Elizabeth, this section curves to an easterly direction from a southeasterly direction, as shown on Figure 3-1a and Figure 3-1c. Section CD crosses the Apple River at





**TABLE 3-1  
CROSSROADS AND WATERCROSSINGS**

No.	Crossing	Interchange/Intersection	U/O*
SECTION AB - Sta. 487+52.86 to Sta. 1037+24.99			
1	Illinois Route 84	Interchange	Over
2	Hughlett Brook		Under
3	Council Hill Road		Over
4	Buckhill Road		Over
5	Galena River		Under
6	Illinois Central RR	Interchange	Under
7	Stagecoach Trail		Under
8	Existing U.S. Route 20		Over
9	Smallpox Creek	Interchange	Under
10	Devil's Ladder Road - relocated		Under
11	Devil's Ladder Road		Over
SECTION BC - Sta. 1037+24.99 to Sta. 1347+07.78			
12	Tippet Road	Interchange	Over
13	Rodden Road		Over
14	Headquarters Road		Under
15	Weston Road		Cul-de-sac
16	Existing Illinois Route 84S		Cul-de-sac
17	Illinois Route 84S - relocated		Over
18	Longhollow Road		Cul-de-sac
SECTION BD - Sta. 6015+90.07 to Sta. 6457+45.04			
19	Rodden Road	Interchange	Over
20	Illinois Route 84S		Over
21	Apple River		Under
SECTION BF - Sta. 1037+24.99 to Sta.1691+93.44			
22	Existing U.S. Route 20	Interchange	Over
23	Furnace Creek		Under
24	Georgetown Road		Under
25	Elizabeth-Scales Mound Rd./Extended Ill. Rte 84		Over
26	Apple River/Apple River Road		Under
27	Becker Road	Interchange	Under
28	Woodbine/Longhollow Road		Over
29	Farion Road - North		Cul-de-sac
30	Farion Road - South		Redirected



**TABLE 3-1 (CONTINUED)  
CROSSROADS AND WATERCROSSINGS**

<b>No.</b>	<b>Crossing</b>	<b>Interchange/Intersection</b>	<b>U/O*</b>
31	Vel Terra Road		<b>Over</b>
32	Scout Camp Road		<b>Under</b>
<b>SECTION CD - Sta. 1347+07.78 to Sta. 1405+42.40</b>			
33	Apple River		<b>Under</b>
<b>SECTION CI - Sta. 1347+07.78 to Sta. 1831+15.87 (Sta. 1668+50.63 Back = Sta. 849+27.99 Ahead)</b>			
34	Longhollow Road		<b>Cul-de-sac</b>
35	Apple River		<b>Under</b>
36	Elizabeth-Hanover Road - North		<b>Cul-de-sac</b>
37	Elizabeth-Hanover Road - South		<b>Redirected</b>
38	Burton Road		<b>Cul-de-sac</b>
39	City of Elizabeth	<b>Interchange</b>	<b>Under</b>
40	Pleasant Hill Road - North		<b>Closed</b>
41	Pleasant Hill Road - South		<b>Closed</b>
42	Madison Road - North and South		<b>Cul-de-sac</b>
43	Existing U.S. Route 20		<b>Over</b>
44	Becker Road		<b>Over</b>
45	Kromher Road	<b>Intersection</b>	<b>At Grade</b>
46	Farion Road (U.S. Route 20)	<b>Intersection</b>	<b>At Grade</b>
47	Center Road		<b>Cul-de-sac</b>
48	Brown Road	<b>Interchange</b>	<b>Over</b>
49	Evans Road - West		<b>Redirected</b>
50	Evans Road - East (Oak Court)	<b>Intersection</b>	<b>At Grade</b>
51	Hatton Road	<b>Intersection</b>	<b>At Grade</b>
52	Logemann Road		<b>Redirected</b>
53	Rush Creek		<b>Under</b>
54	Canyon Park Road	<b>Interchange</b>	<b>Over</b>
55	Funston Road		<b>Closed</b>
56	South Mapes Road		<b>Cul-de-sac</b>
57	Park Road		<b>Cul-de-sac</b>
58	Stockton Road		<b>Over</b>
59	Illinois Route 78	<b>Interchange</b>	<b>Over</b>
60	Yellow Creek - west branch		<b>Under</b>
61	Willow Road	<b>Intersection</b>	<b>At Grade</b>
62	Yellow Creek – tributary		<b>Under</b>
63	Sunnyside Road	<b>Intersection</b>	<b>At Grade</b>
64	Tingle Road	<b>Intersection</b>	<b>At Grade</b>
65	Waddams Grove Road	<b>Intersection</b>	<b>At Grade</b>
66	Crossroad Road	<b>Intersection</b>	<b>At Grade</b>
67	Yellow Creek – tributary		<b>Under</b>
68	Five Corners Road	<b>Intersection</b>	<b>At Grade</b>
69	Illinois Route 73	<b>Interchange</b>	<b>Over</b>



**TABLE 3-1 (CONTINUED)  
CROSSROADS AND WATERCROSSINGS**

No.	Crossing	Interchange/Intersection	U/O*
70	Rees Road		Redirected
SECTION DE - Sta. 6457+45.04 to Sta. 6570+91.70			
71	Elizabeth-Hanover Road	Interchange	Cul-de-sac
72	City of Elizabeth		Under
73	Pleasant Hill Road - North		Cul-de-sac
74	Pleasant Hill Road - South		Cul-de-sac
75	Madison Road		Under
76	Wolf Creek		Under
SECTION EF (N) - Sta. 8008+30.85 to Sta. 1691+93.44 (TUNNEL) (Sta. 8223+00 Back = Sta. 1602+56.16 Ahead)			
77	Derinda Road - over tunnel	Interchange	Under
78	Existing U.S. Rte. 20/Bethel Road - over tunnel		Under
79	Kromher Road		Over
80	Fahrion Road		Cul-de-sac
81	Woodbine Road – West		Redirected
82	Woodbine		Over
83	Woodbine Road – East		Cul-de-sac
84	Center Road – West		Cul-de-sac
85	Center Road – East		Redirected
86	Vel Terra Road		Over
87	Scout Camp Road		Under
SECTION EF (S) - Sta. 6570 + 91.70 to Sta. 1691 + 93.44 (Sta. 6853+81.45 Back = Sta. 1645+00 Ahead)			
88	Derinda Road	Interchange	Over
89	Bethel Road		Over
90	Read Road		Redirected
91	Woodbine		Over
92	Center Road		Redirected
93	Farion Road		Closed
94	Woodbine Road		Relocated
95	Vel Terra Road		Under
96	Scout Camp Road		Under
SECTION FG - Sta. 1691+93.44 to Sta. 1856+05.69			
97	Logemann Road		Over



### TABLE 3-1 (CONTINUED) CROSSROADS AND WATERCROSSINGS

No.	Crossing	Interchange/Intersection	U/O*
<b>SECTION GH (N) - Sta. 1856+05.69 to Sta. 4105+47.99</b> <b>(Sta. 1866+21.80 Back = Sta. 3809+24.77 Ahead)</b>			
98	Rush Creek		Under
99	Canyon Park Road	Interchange	Over
100	Park Road		Over
101	Stockton Road		Under
102	Illinois Route 78	Interchange	Over
<b>SECTION GH (S) - Sta. 1856+05.69 to Sta. 171+83.06</b> <b>(Sta. 1866+21.80 Back = Sta. 3809+24.77 Ahead)</b> <b>(Sta. 3932+00 Back = Sta. 0+00 Ahead)</b>			
103	Rush Creek		Under
104	Canyon Park Road		Over
105	Park Road		Over
106	Stockton Road		Under
107	Illinois Route 78 (Relocated)	Interchange	Over
108	Curtiss Road (Old Ill. Rte. 78)		Closed
<b>SECTION HJ - Sta. 4105+47.99 to Sta. 4947+67.16</b> <b>(Sta. 4168+02.39 Back = Sta. 4500+00 Ahead)</b>			
109	Yellow Creek - west branch		Under
110	Tiger Whip Road		Under
111	Yellow Creek - east branch		Under
112	Steers Road		Under
113	Tingle Road		Over
114	Waddams Grove Road		Under
115	Crossroad Road		Over
116	Five Corners Road		Under
117	Illinois Route 73	Interchange	Under
118	Rees Road		Cul-de-sac
119	Illinois Central RR		Over
120	Galena Road		Over
121	Wagner Road		Over
122	Unity Road		Over
<b>SECTION IJ - Sta. 1831+51.87 to Sta. 1927+39.54</b>			
123	Illinois Central RR		Under



### TABLE 3-1 (CONTINUED) CROSSROADS AND WATERCROSSINGS

No.	Crossing	Interchange/Intersection	U/O*
<b>SECTION IK - Sta. 1831+51.87 to Sta. 2187+39.28</b>			
124	Rees Road		Closed/ Redirected
125	Existing U.S. Route 20		Redirected/ Cul-de-sac
126	Dameier Road	Intersection	At Grade
127	Salem Road		Closed
128	Mound Road	Intersection	At Grade
129	Rink Road	Intersection	At Grade
130	Illinois Central RR		Under
131	Flansburg Road		Cul-de-sac
132	Bolton Road	Interchange	Over
133	Ayp Road		Closed
<b>SECTION JK - Sta. 4947+67.16 to Sta. 5170+00</b>			
134	Unity Road		Over
135	Rink Road		Over
136	Flansburg Road		Under
137	Bolton Road	Interchange	Under
138	Ayp Road		Cul-de-sac

\* Under Proposed U.S. Route 20 or Over Proposed U.S. Route 20



approximately the middle of the section. Section CD is a freeway type section and is 1.8 kilometers (1.1 miles) in length and does not contain any interchanges.

### **3.1.3.6 Section CI**

Section CI is an expressway type section that is approximately 39.5 kilometers (24.7 miles) in length. This section starts west of Elizabeth in a general southeasterly direction, while crossing the Apple River, before turning in a general northeasterly direction bypassing Elizabeth to the south, as shown on Figure 3-1a and Figure 3-1c. Just east of Madison Road, this section swings to an almost due east direction, passes under existing U.S. Route 20, and follows the north slope of Terrapin Ridge, north of U.S. Route 20. This alignment shadows existing U.S. Route 20 to the north for approximately 2.1 kilometers (1.3 miles) before superimposing on the existing U.S. Route 20 right of way for 1.0 kilometer (0.6 mile). Section CI leaves the existing right of way southwest of Woodbine, as shown on Figure 1-2d, and heads in an east-northeast direction for nearly 3.9 kilometers (2.4 miles) before rejoining the existing right of way near Evans Road. This section continues to follow the existing right of way until Canyon Park Road, some 5.9 kilometers (3.7 miles). From Canyon Park Road to Tiger Whip Road, Section CI parallels existing U.S. Route 20 to the north for a distance of 9.0 kilometers (5.6 miles), as shown on Figure 3-1e. At Tiger Whip Road, Section CI would coincide with existing U.S. Route 20, for 10.8 kilometers (6.8 miles), to just west of Rees Road, where this section ends. There are five interchanges within this section - southwest of Elizabeth, Brown Road (south of Woodbine), Canyon Park Road (west of Stockton), Illinois Route 78 (northeast of Stockton), and Illinois Route 73 (south of Lena).

### **3.1.3.7 Section DE**

Section DE is a freeway section that begins just near Elizabeth-Hanover Road southwest of Elizabeth and proceeds east to end east of Wolf Creek, as shown on Figure 3-1a and Figure 3-1c. There is one interchange in this section just east of Elizabeth-Hanover Road. The length of this section is approximately 3.5 kilometers (2.2 miles).

### **3.1.3.8 Section EF - North**

Section EF - North is a freeway section that begins where Section DE ended, as shown on Figure 3-1a and Figure 3-1d. This section curves to the northeast and begins a tunnel alignment bypassing Elizabeth to the southeast. The tunnel passes under Terrapin Ridge, Derinda Road, and the intersection of U.S. Route 20 with Bethel Road. The tunnel portion ends northeast of the U.S. Route 20/Bethel Road intersection, north of existing U.S. Route 20, and continues in a northeasterly direction to the end of the section approximately one mile east of Scout Camp Road. The only interchange within this section is located northwest of Woodbine. The length of Section EF - North is approximately 9.3 kilometers (5.8 miles).

### **3.1.3.9 Section EF - South**

Section EF-South is a freeway section that starts in the same locations as Section EF - North, as shown on Figure 3-1a and Figure 3-1d. Section EF - South continues east under Derinda Road before heading in a northeasterly direction, paralleling the proposed tunnel alignment of Section EF - North. Less than three-quarters of a mile separate the tunnel alignment and this alignment. Just before Fahrion Road, Section EF - South turns north for nearly one mile before resuming a northeasterly direction. This section ends approximately one mile east of Scout Camp Road. The only interchange within this section is located southwest of Woodbine on U.S.



Route 20 near Fahrion Road. The length of Section EF - South is approximately 10.1 kilometers (6.3 miles).

### **3.1.3.10 Section FG**

Section FG is a freeway section that heads in a generally northeasterly direction from east of Scout Camp Road to west of Canyon Park Road just west of Rush Creek, as shown on Figure 3-1a. This section has a length of approximately 5.0 kilometers (3.1 miles).

### **3.1.3.11 Section GH - North**

The total length of Section GH - North is 9.3 kilometers (5.8 miles). Section GH - North is a freeway section that starts just west of Rush Creek and heads in a general easterly direction, as shown on Figure 3-1b and Figure 3-1e. Section GH - North passes Stockton to the north (and stays north of Simmons Mound) before shifting direction to the southeast. This section curves to the east and ends less than three-quarters of a mile west of Tiger Whip Road. Two interchanges are found within this section - one at Canyon Park Road, northwest of Stockton, and one at Illinois Route 78, northeast of Stockton. Illinois Route 78 is shifted to the west in order to provide an adequate interchange with Section GH - North while avoiding Simmons Mound.

### **3.1.3.12 Section GH - South**

Section GH - South is a freeway section that also starts just west of Rush Creek and heads in a general easterly direction, as shown on Figure 3-1b and Figure 3-1e. This section curves to the southeast just west of Park Road and continues southeasterly to approximately Curtiss Road (Ill. Rte. 78). From Curtiss Road the alignment heads in an easterly direction, passes Simmons Mound to the south, and ends less than three-quarters of a mile west of Tiger Whip Road. There is only one interchange along this section at Illinois Route 78. Relocated Illinois Route 78 starts at the existing "T" intersection of Illinois Route 78 and existing U.S. Route 20 in Stockton. Relocated Illinois Route 78 proceeds in a northeasterly direction - through the proposed interchange - and ties back onto the existing Illinois Route 78 alignment north of Simmons Mound. The length of this section is 12.3 kilometers (7.7 miles), of which 3.2 kilometers (two miles) is for relocated Illinois Route 78.

### **3.1.3.13 Section HJ**

Section HJ is a freeway section that begins west of Tiger Whip Road and travels easterly for 2.2 kilometers (1.4 miles) before curving to the northeast and immediately curving back to the east, as shown on Figure 3-1b. Section HJ continues in a general easterly direction for approximately 8.6 kilometers (5.4 miles) before curving to the southeast where the alignment passes under Galena Road and the Illinois Central Railroad. The section continues in this direction before ending between Wagner Road and Unity Road, approximately one mile away. The only interchange within this section is at Illinois Route 73 south of Lena. Section HJ has a distance of approximately 15.7 kilometers (9.7 miles).

### **3.1.3.14 Section IJ**

Starting just west of Rees Road, Section IJ is an expressway section that gently curves from an east direction to a southeast direction, as shown on Figure 3-1b and Figure 3-1f. The length of this section is approximately 2.9 kilometers (1.8 miles). The Illinois Central Railroad passes under this section just southwest of Lena.



### **3.1.3.15 Section IK**

Section IK is an expressway section that starts west of Rees Road and curves from an easterly direction to a southeasterly direction, as shown on Figure 3-1b and Figure 3-1f. This alignment bypasses Eleroy to the southwest and continues in a southeasterly direction for approximately 4.0 kilometers (2.5 miles) before curving to the east. Section IK is superimposed on existing U.S. Route 20 at several locations and proceeds in an easterly direction for approximately 0.8 miles. Section IK passes under the Illinois Central Railroad and then angles to the northeast in order to meet existing U.S. Route 20 east of Ayp Road, where the section ends. An interchange at Bolton Road is the only interchange proposed in this section. The length of Section IK is approximately 10.7 kilometers (6.7 miles).

### **3.1.3.16 Section JK**

Continuing in a southeasterly direction, Section JK is a freeway section that gently curves toward the east, as shown on Figure 3-1b and Figure 3-1f. After an interchange with Bolton Road, this alignment meets existing U.S. Route 20 almost 0.8 kilometers (0.5 miles) east of Ayp Road, where the section ends. The length of Section JK is approximately 7.1 kilometers (4.4 miles).

## **3.1.4 Freeway Alternate**

Under the Freeway Alternate, U.S. Route 20 would be constructed as a four-lane freeway from Illinois Route 84 north of the city of Galena to Business U.S. Route 20 near Bolton Road northwest of the city of Freeport. A freeway is defined as a divided highway facility having two or more lanes for the exclusive use of traffic in each direction and full control of access and egress. Traffic on eastbound and westbound lanes would be separated by a minimum 16.4-meter (54-foot) wide median. At various locations, the median would vary in width, but would not exceed 25.6 meters (84 feet). Access would be provided at interchanges (always grade-separated), including all state-marked highways. All county roads, and most township roads, would be grade-separated. Frontage roadways would provide access to existing single-family homes, farmsteads, commercial operations, or industrial operations.

### **3.1.4.1 Freeway Alternates**

There are 10 different Freeway Alternates depending on the combination of sections. All of these Alternates contain only freeway design elements and would pass east of Galena; south of Galena Territory and Lena; and north of Stockton. The description of each alternate follows.

#### **3.1.4.1.1 Alternate 1 (Longhollow Freeway w/ North Simmonds Mound Alt.)**

Alternate 1 would consist of sections AB, BF, FG, GH (N), HJ, and JK. This alternate would be approximately 76.4 kilometers (47.8 miles) in length and follow Longhollow within Section BF. Alternate 1 would pass north of Elizabeth, Woodbine, Simmons Mound, and Eleroy.

#### **3.1.4.1.2 Alternate 2 (Longhollow Freeway w/ South Simmonds Mound Alt.)**

Alternate 2 would consist of sections AB, BF, FG, GH (S), HJ, and JK. This alternate would be approximately 79.7 kilometers (49.7 miles) in length and follow Longhollow within Section BF.





Alternate 2 would pass south of Simmons Mound; and north of Elizabeth, Woodbine, and Eleroy.

#### **3.1.4.1.3 Alternate 3 (Irish Hollow Freeway w/ North Simmonds Mound Alt.)**

Alternate 3 would consist of sections AB, BD, DE, EF (S), FG, GH (N), HJ, and JK. This alternate would be approximately 80.1 kilometers (50.1 miles) in length and generally follow Irish Hollow within Section BD. Alternate 3 would pass south of Elizabeth; and north of Woodbine, Simmons Mound, and Eleroy.

#### **3.1.4.1.4 Alternate 4 (Irish Hollow Freeway w/ South Simmonds Mound Alt.)**

Alternate 4 would consist of sections AB, BD, DE, EF (S), FG, GH (S), HJ, and JK. This alternate would be approximately 83.2 kilometers (52.0 miles) in length and generally follow Irish Hollow within Section BD. Alternate 4 would pass south of Elizabeth and Simmons Mound; and pass north of Woodbine and Eleroy.

#### **3.1.4.1.5 Alternate 5 (Irish Hollow Tunnel Freeway w/ North Simmonds Md. Alt.)**

Alternate 5 would consist of sections AB, BD, DE, EF (N), FG, GH (N), HJ, and JK. This alternate would be approximately 79.4 kilometers (49.6 miles) in length and generally follow Irish Hollow in Section BD. A 4,000-foot tunnel under Terrapin Ridge is proposed in Section EF (N). Alternate 5 would pass south of Elizabeth; and pass north of Woodbine, Simmons Mound, and Eleroy.

#### **3.1.4.1.6 Alternate 6 (Irish Hollow Tunnel Freeway w/ South Simmonds Md. Alt.)**

Alternate 6 would consist of sections AB, BD, DE, EF (N), FG, GH (S), HJ, and JK. This alternate would be approximately 82.4 kilometers (51.5 miles) in length and generally follow Irish Hollow in Section BD. A 4,000-foot tunnel under Terrapin Ridge is proposed in Section EF (N). Alternate 6 would pass south of Elizabeth and Simmons Mound; and pass north of Woodbine and Eleroy.

#### **3.1.4.1.7 Alternate 7 (Upper Irish Hollow Freeway w/ North Simmonds Md. Alt.)**

Alternate 7 would consist of sections AB, BC, CD, DE, EF (S), FG, GH (N), HJ, and JK. This alternate would be approximately 77.9 kilometers (48.7 miles) in length and traverse the northern slope of Irish Hollow in Section BC. Alternate 7 would pass north of Woodbine, Eleroy, and Simmons Mound; and south of Elizabeth.

#### **3.1.4.1.8 Alternate 8 (Upper Irish Hollow Tunnel Freeway w/ North Simmonds Md. Alt.)**

Alternate 8 would consist of sections AB, BC, CD, DE, EF (N), FG, GH (N), HJ, and JK. This alternate would be approximately 77.1 kilometers (48.2 miles) in length and traverse the northern slope of Irish Hollow in Section BC. A 4,000-foot tunnel under Terrapin Ridge is found



in Section EF (N). Alternate 8 would pass north of Woodbine, Eleroy, and Simmons Mound; and south of Elizabeth.

#### **3.1.4.1.9 Alternate 9 (Upper Irish Hollow Freeway w/ South Simmons Mound Alt.)**

Alternate 9 would consist of sections AB, BC, CD, DE, EF (S), FG, GH (S), HJ, and JK. This alternate would be approximately 81.0 kilometers (50.6 miles) in length and traverse the northern slope of Irish Hollow in Section BC. Alternate 9 would pass north of Woodbine and Eleroy; and south of Elizabeth and Simmons Mound.

#### **3.1.4.1.10 Alternate 10 (Upper Irish Hollow Tunnel Freeway w/South Simmons Mound Alt.)**

Alternate 10 would consist of sections AB, BC, CD, DE, EF (N), FG, GH (S), HJ, and JK. This alternate would be approximately 80.2 kilometers (50.1 miles) in length and traverse the northern slope of Irish Hollow in Section BC. A 4,000-foot tunnel under Terrapin Ridge is found in Section EF (N). Alternate 10 would pass north of Woodbine and Eleroy; and pass south of Elizabeth and Simmons Mound.

### **3.1.5 Expressway Alternate**

The alignments of the Expressway Alternates generally follow the existing U.S. Route 20 alignment. They incorporate the bypass of Galena (with a freeway cross section) and bypass Elizabeth, Woodbine, Stockton, and Eleroy. Under the Expressway Alternate, traffic on the eastbound and westbound lanes would be separated by a 15.2-meter (50-foot) wide median.

An expressway is defined as a principal arterial highway having two or more lanes for the exclusive use of traffic in each direction. It is constructed with partial access control with bypasses around communities which are usually designed to full access control.

Crossroads usually remain open and are designed as intersections with median crossovers. However, a grade separation and/or interchange may be proposed depending upon traffic volumes and terrain.

The expressway configuration would travel east of Horseshoe Mound. Large cut and fill slopes would occur near the entrance to Galena Territory, at the end of the ridge near the View Tower, on Terrapin Ridge, on the ridge east of Woodbine, near Rush Creek, and on the ridge west of Stockton. Major bridge structures would be required at the Galena River, in the small valley at Stagecoach Trail, at Smallpox Creek, Apple River, and Rush Creek.

#### **3.1.5.1 Expressway Alternates**

Of the 12 different Alternates, only two have expressway components and are discussed here.

##### **3.1.5.1.1 Alternate 11 (Expressway South Eleroy Alt.)**

Alternate 11 would consist of freeway section AB and expressway sections BC, CI, and IK. This alternate would be approximately 76.3 kilometers (47.7 miles). This alternate would pass south of Elizabeth, Woodbine, Simmons Mound, and Eleroy.



### 3.1.5.1.2 Alternate 12 (Expressway North Eleroy Alt.)

Alternate 12 would consist of freeway section AB, expressway sections BC, CI, IJ, and freeway section JK. This alternate would be approximately 75.5 kilometers (47.2 miles). Alternate 12 would pass north of Eleroy; and south of Elizabeth, Woodbine, and Simmons Mound.

Table 3-2 provides an overview of the sections that make up the design alternatives, while Figures 3-2, 3-3, and 3-4 depict the typical cross-sections for the Freeway and Expressway Alternates, including the Freeway Tunnel Alignment (Alternates 8 and 10).

## 3.2 Project Alternatives Eliminated

### 3.2.1 Roadway Improvements to Existing Alignment

One alternate that was considered and eventually discarded was the construction of a new four-lane facility on the existing U.S. Route 20 alignment from Galena to Freeport. While it was determined that portions of the existing alignment could successfully be incorporated into a four-lane facility, other areas along the existing U.S. Route 20 proved to be undesirable for a four-lane up-grade. This alternate was dismissed from further study for the following reasons:

- The rough terrain of Jo Daviess County from Galena to Stockton prohibited construction of a new highway along the existing alignment.
- Installing a new roadway on the existing alignment would not meet the purpose and need for capacity. Portions of the existing alignment do not meet current design standards, therefore, a new road supporting identical geometrics to the existing road would also fail to meet current design standards.
- The proximity of historic buildings to the existing U.S. Route 20 precluded widening in the downtown Galena area.
- The sensitive environmental areas encountered along the existing alignment, just west of the entrance to the Galena Territory to a point west of Woodbine, discouraged the widening of the current route. The upgrade to a four-lane expressway along the existing route would have caused major disruption to the Tapley Woods Conservation Area. In addition, many other scenic qualities along this stretch of existing U.S. Route 20 would have been destroyed.

### 3.2.2 Alignment through Scales Mound

The alignment through Scales Mound extends eastward from the intersection of Illinois Route 84 and U.S. Route 20 (Section AB) north of Galena, toward the Apple River, passing the community of Scales Mound. South of the Apple River the route continues southeasterly below the Apple River Canyon State Park to Illinois Route 78 near Stockton. Near Stockton, the corridor extends eastward (Section HJ), paralleling the existing U.S. Route 20 alignment to Lena where it extends in a southeasterly direction to connect to the Freeport bypass (see Figure 3-5). This alignment was part of the studies conducted by the Department in 1969, and an in-depth Corridor Analysis for the proposed alignment through Scales Mound was prepared by the



**TABLE 3-2**  
**SECTION ALTERNATE CROSS-REFERENCE MATRICES**

			SECTION	A-B	B-C	B-D	B-F	C-D	C-I	D-E	E-F (N)	E-F (S)	F-G	G-H (N)	G-H (S)	H-J	I-J	I-K	J-K
				GALENA BYPASS FREEWAY OR EXPRESSWAY <sup>1</sup>	FREEWAY OR EXPRESSWAY <sup>1</sup>	IRISH HOLLOW FREEWAY	LONGHOLLOW FREEWAY	EXPRESSWAY- IRISH HOLLOW FREEWAY CONNECTOR	EXPRESSWAY	IRISH HOLLOW FREEWAY	IRISH HOLLOW TUNNEL FREEWAY	IRISH HOLLOW FREEWAY	FREEWAY	NORTH SIMMONS MOUND BYPASS FREEWAY	SOUTH SIMMONS MOUND BYPASS FREEWAY	FREEWAY	EXPRESSWAY- FREEWAY CONNECTOR	EXPRESSWAY	FREEWAY OR EXPRESSWAY <sup>1</sup>
ALTERNATE	1	LONGHOLLOW FREEWAY W/NORTH SIMMONS MOUND ALTERNATE		●			●						●	●		●			●
	2	LONGHOLLOW FREEWAY W/SOUTH SIMMONS MOUND ALTERNATE		●			●						●		●	●			●
	3	IRISH HOLLOW FREEWAY W/NORTH SIMMONS MOUND ALTERNATE		●		●				●		●	●	●		●			●
	4	IRISH HOLLOW FREEWAY W/SOUTH SIMMONS MOUND ALTERNATE		●		●				●		●	●		●	●			●
	5	IRISH HOLLOW TUNNEL FREEWAY W/NORTH SIMMONS MOUND ALTERNATE		●		●				●	●		●	●		●			●
	6	IRISH HOLLOW TUNNEL FREEWAY W/SOUTH SIMMONS MOUND ALTERNATE		●		●				●	●		●		●	●			●
	7	UPPER IRISH HOLLOW FREEWAY W/NORTH SIMMONS MOUND ALTERNATE		●	●			●		●		●	●	●		●			●
	8	UPPER IRISH HOLLOW TUNNEL FREEWAY W/NORTH SIMMONS MOUND ALTERNATE		●	●			●		●	●		●	●		●			●
	9	UPPER IRISH HOLLOW FREEWAY W/SOUTH SIMMONS MOUND ALTERNATE		●	●			●		●		●	●		●	●			●
	10	UPPER IRISH HOLLOW TUNNEL FREEWAY W/SOUTH SIMMONS MOUND ALTERNATE		●	●			●		●	●		●		●	●			●
	11	EXPRESSWAY SOUTH ELEROY ALTERNATE		●	●				●									●	
	12	EXPRESSWAY NORTH ELEROY ALTERNATE		●	●				●								●		●

<sup>1</sup> Dependent on Alternate

\* The Preferred Alternate is highlighted.















Department for this route<sup>8</sup>. The corridor analysis report dismissed this alternate from further consideration for the following reasons:

- The Scales Mound Corridor would likely result in direct and proximity impacts to a significant 4(f) resource, the Apple River Canyon State Park. The roadway would extend across the Apple River near extensive cliff swallow populations and cliff swallow nesting sites. The Scales Mound Corridor would extend through those areas designated for the planned expansion of the Apple River Canyon Park.
- The alignment through Scales Mound favors thru traffic, and therefore would provide inadequate access to the City of Galena, the Galena Territories and the other communities presently served by U.S. Route 20. This alternate would not accommodate the anticipated economic growth for area communities within the Jo Daviess and Stephenson County region.
- An alignment through Scales Mound would still require that existing U.S. Route 20 be corrected and maintained at a higher level of service to accommodate existing and future travel demand and anticipated economic development activity and to improve travel safety along various sections of the existing U.S. Route 20 corridor. Development of the Scales Mound Corridor alone would not eliminate the need for capacity improvements to the existing U.S. Route 20.
- Because the proposed alignment through Scales Mound did not adequately address capacity deficiencies and increased traffic volumes, a reduction in traffic crashes could not be anticipated. It was determined that this route would fail to improve traffic safety within the existing U.S. Route 20 corridor to acceptable levels.
- The alignment through Scales Mound fails to improve east-west service to recreational and historic areas within the region, particularly along the existing U.S. Route 20 corridor.

### 3.2.3 Alignment through Snipe Hollow

The Freeway alignment through Snipe Hollow extends eastward from the intersection of Illinois Route 84 and U.S. Route 20 (Section AB) north of Galena and continues eastward north of the Galena Territory. East of the Galena Territory the corridor heads south and eventually merges into the alignment through Longhollow (Section BF) just east of Elizabeth Scales Mound Road (County Route 4) (see Figure 3-5). The alignment through Snipe Hollow was dismissed from further consideration for the following reasons:

- The Snipe Hollow alignment would not meet community access needs. The majority of area traffic is destined for two destinations, the city of Galena and the Galena Territories. However, the Snipe Hollow alternate would not provide travelers sufficient access to these areas. This alignment would provide only one interchange for the city of Galena which would have been geometrically inadequate to handle the peak load of vehicles known to exist at Galena during the busiest tourism days. The entrance and service road network would require complete reconstruction to provide access to the Snipe Hollow Corridor.
- The Snipe Hollow alignment would still leave four-lane warrants on existing U.S. Route 20 between the intersection of Illinois Route 84 and U.S. Route 20 north of Galena easterly to the intersection of Illinois Route 84 and U.S. Route 20 west of Elizabeth. Thus, it does not fulfill the objective of providing adequate highway capacity for traffic within the corridor.

<sup>8</sup> *Corridor Analysis for Scales Mound Corridor*, Illinois Department of Transportation, November 1994.



- The Snipe Hollow alignment would fail to attract local traffic and through traffic destined for Galena, therefore traffic volumes would remain high along the existing alignment. As a result potential conflicts would not be reduced and safety concerns would not be addressed.
- The Snipe Hollow alignment would result in a 26 percent greater property severance than the alignment through Long Hollow, and an 18 percent greater property severance than the alignment through Irish Hollow.

### 3.2.4 Mount Hope Road Bypass East of Galena

The Mount Hope Road bypass is a Galena bypass alternate that was considered for the area east of Galena. This alternate originates north of Galena (Section AB) and heads south, bypassing Galena on the east, following the Galena Territory on its western limits (see Figure 3-5). The Mount Hope Road bypass was dismissed from further study for the following reasons:

- The bypass would result in a greater number of property severance impacts than the other bypass alternates.
- The bypass would result in a greater number of displacements than the other bypass alternates.
- The bypass would be located in close proximity to biological concerns at Smallpox Creek.
- The bypass would require the reconstruction and realignment of +/-1219 meters (+/-4000 feet) of Mount Hope Road.
- Extremely difficult terrain at the interchange location would make construction costly with deep rock cuts and lengthy ramps to meet design standards and sight distance requirements.
- A trumpet interchange at Mount Hope Road would require the realignment of +/-610 meters (+/-2000 feet) of existing U.S. Route 20 with associated impacts, would increase right of way requirements, and would have direct conflicts with a family cemetery.

### 3.2.5 AYP Road Interchange Alternate

Two interchanges, at AYP Road and Bolton Road (Section JK), were studied for the area west of Freeport (see Figure 3-5). The interchange at AYP Road was dismissed from further consideration and the Bolton Road interchange was adopted for the following reasons:

- An intersection at AYP Road would result in a greater number of property impacts than an intersection at Bolton Road.
- The construction of an interchange at AYP Road would potentially impact several residences including a possible historic structure.
- Bolton Road has the potential to become a west-side beltline facility serving Freeport while AYP Road has minimal potential to be extended to the south.
- The needs of the overall public would be better met with an interchange at Bolton Road rather than at AYP Road.



### 3.2.6 Alignment through Northwest Irish Hollow

Although an alignment through the northern section of the Irish Hollow valley (Section BD) is currently being considered as a possible alternate, an older, different alignment through the northwest Irish Hollow (Section BD) was at one point studied as a possible project alternative (see Figure 3-5). On the north end, this initial northwest Irish Hollow alternate connected the alignment to the interchange at Horseshoe Mound and continued south.

The following reasons were the basis for the dismissal of this alignment from further study:

- The original alignment through northwest Irish Hollow did not meet community access needs. The majority of area traffic is destined for two destinations, the city of Galena and the Galena Territory. However, the initial alignment through northwest Irish Hollow would not provide a direct connection for the Galena Territory, and therefore, would not provide travelers sufficient access to this area.
- This alternate failed to meet current design standards.
- This route would potentially impact a greater number of farm properties than the other alignments under consideration for this section of the project.
- It was determined that this alternate would fail to provide adequate access for farm vehicles.
- This alignment did not offer any significant engineering or construction advantages over the other alignments being considered that would encourage its inclusion for further analysis.

## 3.3 Preferred Alternative (Alternate)

The development of the project's Freeway and Expressway Alternates resulted from the close coordination and cooperation between the Department and various state and federal agencies, which were established early in the project's development. In addition, the public involvement program, which included a series of public information meetings, periodic newsletters, public information repositories, an 800 number information phone line, and a Citizens Advisory Council, served to further establish locally acceptable alignments for the Freeway and Expressway Alternates.

Local and regulatory environmental agencies, along with the Advisory Council and its Work Groups, which were established as part of the public involvement program (see Chapter 5.0), were all provided technical background information on the project as well as the environmental technical reports, which were prepared for this project separate from this DEIS. The agency and public comments received during the public involvement process and after the public review of the preliminary environmental studies, helped to further identify those design alternates to be further evaluated in the DEIS.

Based on its social, economic, environmental and engineering design studies, input from the general public and the recommendations of the U.S. Route 20 Citizen's Advisory Council, the Department has determined that Alternate 2, the Long Hollow Freeway with the South Simmons Mound variation is the Preferred Alternate (Alternate 2).

The Department has found that while all of the Build Alternates provide for adequate system capacity, provide adequate community access, afford system continuity and address safety concerns, the Freeway Alternates provide a greater degree of safe travel through the project



corridor than do the Expressway Alternates, due to the introduction of grade-separated interchanges. The Department's traffic crash data supports the consensus and recent research that grade-separated interchanges provide a greater level of safety than at-grade and signalized intersections, such as those that would be constructed with the Expressway Alternates.

Further, the Department has found that compared to the other Build Alternates, Alternate 2:

1. has the least negative impact on environmental factors such as preservation of natural areas and threatened and endangered species,
2. best preserves prime and important farmland while minimizing adverse travel for farm operations and incompatible traffic mixing for farm vehicles,
3. best facilitates the travel and market access needs of the local communities in the project area,
4. provides the best opportunity to facilitate contiguous growth and development for communities in the U.S. Route 20 corridor,
5. avoids construction on or near ridge tops, thus making it consistent with JoDaviess County land-use initiatives,
6. provides for the maximum use of existing U.S. Route 20 as a scenic route for travelers,
7. supports the Stephenson County Comprehensive land-use plan which recommends a four-lane freeway and
8. is one of the least costly alternates to build.

The determination of Alternate 2 as the Preferred Alternate by the Department is supported by the findings of the U.S. Route 20 Advisory Council Report to the Department dated September 6, 2001. See Appendix H. In this document, the Advisory Council, through a unanimous decision, strongly recommended that the Department adopt the Long Hollow Freeway Alternate with the South Simmons Mound variation as its Preferred Alternate and that the Department present it as the Preferred Alternate at the public hearing.

The Council further requested that the Department expedite the design and construction of this project, putting a priority on those sections with the highest traffic volumes. Finally, the Advisory Council recommended that the Department take a strong, progressive, proactive approach to mitigating the negative impacts of a new roadway, including the involvement of a citizen advisory group in the design and construction phases of the proposed project.

